EFFECTA KOMPLETT III

20-25-35 kW

COMISSIONING GUIDE

QUICK START GUIDE

■ Symbols in the document

Note!
The icon is shown when a important notice of the products needs to be understood.

High voltage
When the icon is shown extra caution needs to be taken since live parts of the boiler is possible to contact without them being isolated. Personal injury or even death may occur! All installations must be done by a trained professional and comply with current building redulations.

Hot surfaces
The icon is shown when there is risk for personal scaldings or burns.

■ Introdction

This guide will not replace the service and/or user manual of the product. The guide is only designed to be a help on first start up of the product as well as a guide through the commissioning process.

All parts and menus of this document is described in depth in the product manual.

Effecta AB - Västra Rågdalsvägen 21 - 434 99 Kungsbacka - 0300 - 22320 - info@effecta.se

■ Table of content

■ Check list before electrical power feed

Water content
Before powering up the system with electrical mains please ensure that all the boiler is filled with water. All pumps controlled by the boiler needs to be in water filled heating circuits where there is no blockages from circulation.

Doors
All doors and cleaning accesses needs to be closed and sealed before powering up.

Flue / chimney
The boiler must be connected to a approved flue system to evacuate smoke gasses before powering up the boiler.

Fuel feeding
Depending on what fuel feed option the boiler is equipped with the fuel feed system needs to be completed before power up as well as the storage filled with pellets.

When above is confirmed please allow electrical mains to the boiler.

Control display

Language

Choose desired language by pressing any of the flags on the screen.

If change of language is desired please open OTHER SETTINGS where language change can be done again.


Home screen

On the home screen there is a image of the boiler with temperature readings of the flue, flow of first heating circuit and boiler temperature.

A CO2 vaule is displayed (only in operation phase) if the a lambda probe is used.

A flame icon indicates the flame value visual inside the boiler in percent.

If the electrical heater is used and applicable to the system a current consumption will be displayed.

At the bottom part a operating mode will normally be displayed for instance; Ignition, pre operation, operation phase etc.
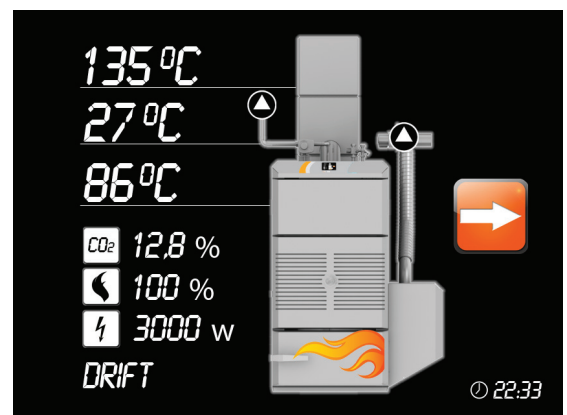
Main menu

When pressing the touch display three icons will appear. In this quick start guide you will be asked to enter the different menus in order to do different settings.

■ Program setup - fan

Controller setup

Press anywhere on the display and then press the OPE-RATION icon.

Operation settings menu:

Use the + and - buttons together with OK and the Return key to navigate the menu system.
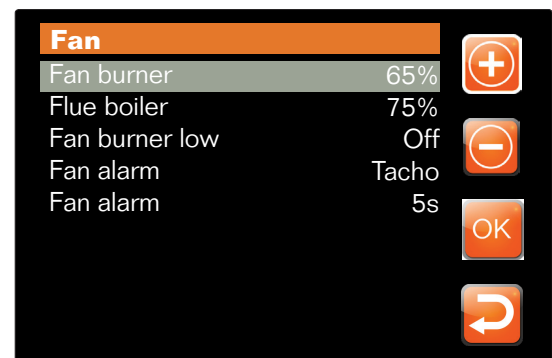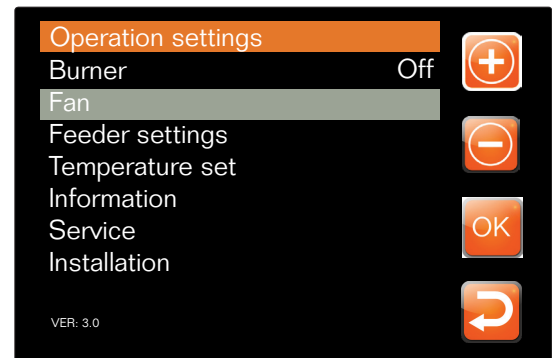
- Confirm that burner is set to OFF.

Fan menu:

Enter the FAN menu, a passcode is required which is 2233. The fan values are set up during operation with a flue analyzer according to the installation manual. We can however recommend the following values to get the boiler operating enough to be able to measure with a flue analyzer:

	20kW	25kW	35kW
Fan burner	55%	65%	55%
Flue boiler	65%	75%	90%

The "Fan burner low" parameter is set to ON if you which to have the low power output mode activated. We recommend to have it activated on a Komplett III Light which direct feeds any heating circuit without a accumulator tank.

Please leave the menu by pressing the Return key repeatedly until the home screen appears.

Operation settings

Burner	Off
Fan	
Feeder settings	
Temperature set	
Information	
Service	
Installation	

VER: 3.0

Fan

Fan burner	65%
Flue boiler	75%
Fan burner low	Off
Fan alarm	Tacho
Fan alarm	5s

◼ Program setup - feeder settings

Calibration of feed dose
The most critical part of the commissioning is to calibrate the feed doses of pellets correctly. It is therefore of outmost importance that it is done precisely and according to this manual. If the feed doses isn´t setup according to our recommendations the boiler will deliver a faulty output which can damage the system and it will most likely also result in unstable operation of the product.

Auger fed model
The calibration process is described on page 8-9.
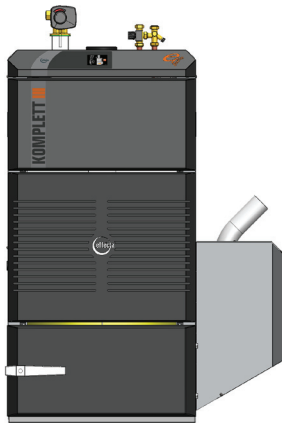
Integrated fuel store model
The calibration process is described on page 10-11.

Suction model
The calibration process is described on page 12-15.

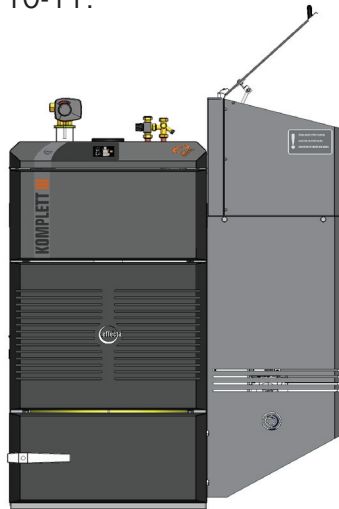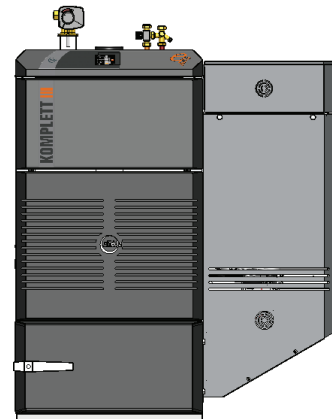## ■ Calibration of feed dose - Auger version

Controller setup
Press anywhere on the display and then press the OPE-RATION icon.
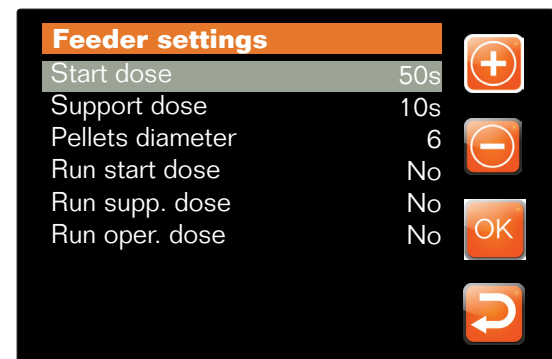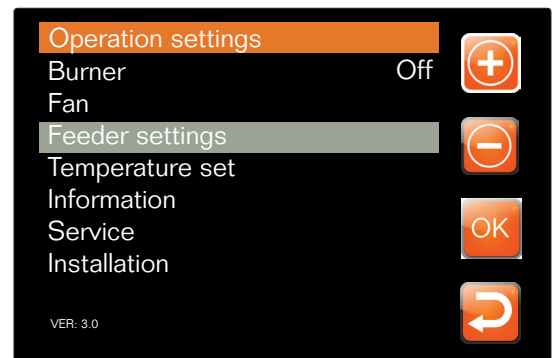
Operation settings menu:
Use the + and - buttons together with OK and the Return key to navigate the menu system.

- Confirm that burner is set to OFF.

Feeder menu:
Enter the FEEDER SETTINGS menu.

Change the pellets diameter to 6 or 8 mm. pellets.

Operation settings	
Burner	Off
Fan	
Feeder settings	
Temperature set	
Information	
Service	
Installation	
VER: 3.0	

Feeder settings	
Start dose	50s
Support dose	10s
Pellets diameter	6
Run start dose	No
Run supp. dose	No
Run oper. dose	No

Calibration of feed dose with a auger fed boiler:
If the boiler is attached to a external feeding auger the start dose value needs to be veriefied according to the below information.

Remove the black plastic hose which connects the feeding auger with the burner unit. Place some sort of container underneath the plastic hose to collect the pellets that will be fed during a auger filling procedure.

The hole down the fall shaft to the burner (where the black plastic hose where connected originally) needs to plugged temporarily in order to be able to build under pressure in the fire box and allow the auger to feed in test mode.

Enter the OPERATION menu and then INSTALLATION menu. Activate the FILL FEEDER function which will force feed pellets for 15 minutes. Meanwhile the auger is filling up tap the auger repeatedly to ensure that it is packed with fuel. When pellets comes out at the end of the auger the fill feeder should be set back to NO and then directly back to ON to have a full 15 minutes feed of pellets to make sure enough pellets is in the auger. Collect the pellets in a bag or container during this 15 minute feed. Do not stop the feeding process, it is critical to have a properly packed and filled auger in order to calibrate the feed rate in the next step.

! A correctly adjusted start dose is one of the most critical and important steps of a comissioning process. If the start dose is incorrect it will give the wrong output on the boiler which might create operational issues, excessive wear on parts and even be dangerous in extreme situations.
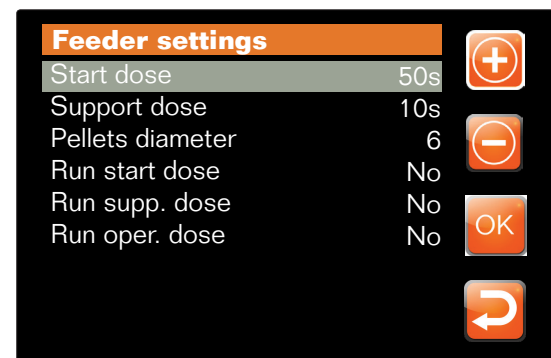
■ Calibration of feed dose - Auger version

Setting the start dose

When the auger is properly packed and full enter the OPERATION menu and open the FEEDER SETTINGS menu and then press RUN START DOSE.

Collect the pellets being fed during the test start dose process. It should be exactly 40cl. If it is less increase the amount of seconds of the start dose and run another test It the start dose is greater than 40cl decrease the amount of seconds for the start dose and then run the test start dose again.

Keep testing until the start dose being fed is exactly 40cl.

When this step has been processed the boiler is to be reassembled again by putting the fall shaft hose back in to the burner.

Operation settings	
Burner	Off
Fan	
Feeder settings	
Temperature set	
Information	
Service	
Installation	
VER: 3.0	

Feeder settings	
Start dose	50s
Support dose	10s
Pellets diameter	6
Run start dose	No
Run supp. dose	No
Run oper. dose	No

! *If the feeder isn´t running it is likely that under pressure over the boiler isn´t sufficient. Make sure that the burner fall shaft is plugged at all time when the black plastic fall hose is out of the burner.*

■ Calibration of feed dose - Integrated fuel store version

Controller setup
Press anywhere on the display and then press the OPE-RATION icon.

Operation settings menu:
Use the + and - buttons together with OK and the Return key to navigate the menu system.

- Confirm that burner is set to OFF.

Feeder menu:
Enter the FEEDER SETTINGS menu.

Change the pellets diameter to 6 or 8 mm. pellets.

Operation settings	
Burner	Off
Fan	
Feeder settings	
Temperature set	
Information	
Service	
Installation	
VER: 3.0	

Feeder settings	
Start dose	50s
Support dose	10s
Pellets diameter	6
Run start dose	No
Run supp. dose	No
Run oper. dose	No

Calibration of feed dose with a boiler equipped with a integral fuel store:
If the boiler is equipped with a intergrated fuel store on any side the start dose value needs to be veriefied according to the below information.

Remove the front and/or side casing of the fuel store. The internal fuel store and burner unit will be visual. Remove the black plastic hose which connects the feeding auger with the burner unit. Place some sort of container underneath the plastic hose to collect the pellets that will be fed during a auger filling procedure. (See illustration on page 11. for further information)

The hole down the fall shaft to the burner (where the black plastic hose where connected originally) needs to plugged temporarily in order to be able to build under pressure in the fire box and allow the auger to feed in test mode.

Enter the OPERATION menu and then INSTALLATION menu. Activate the FILL FEEDER function which will force feed pellets for 15 minutes. Meanwhile the auger is filling up tap the auger repeatedly to ensure that it is packed with fuel. When pellets comes out at the end of the auger the fill feeder should be set back to NO and then directly back to ON to have a full 15 minutes feed of pellets to make sure enough pellets is in the auger. Collect the pellets in a bag or container during this 15 minute feed. Do not stop the feeding process, it is critical to have a properly packed and filled auger in order to calibrate the feed rate in the next step.

! A correctly adjusted start dose is one of the most critical and important steps of a comissioning process. If the start dose is incorrect it will give the wrong output on the boiler which might create operational issues, excessive wear on parts and even be dangerous in extreme situations.

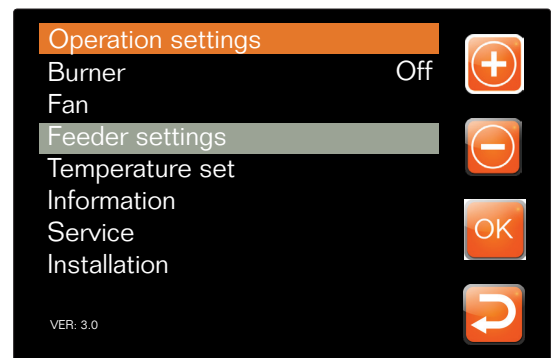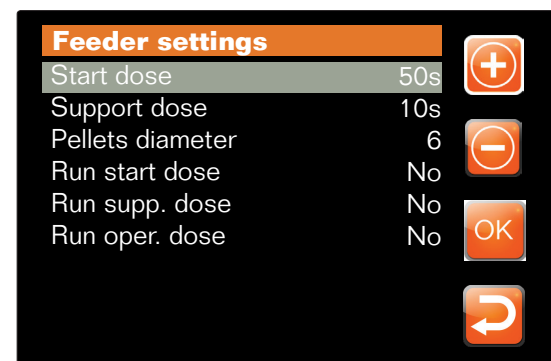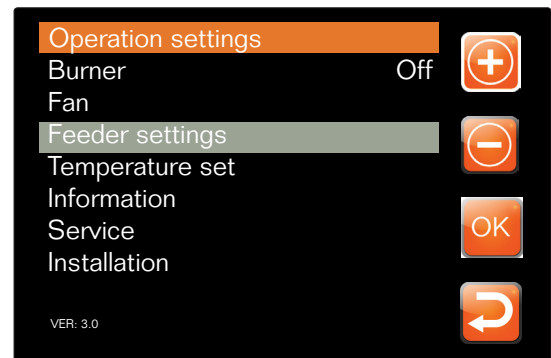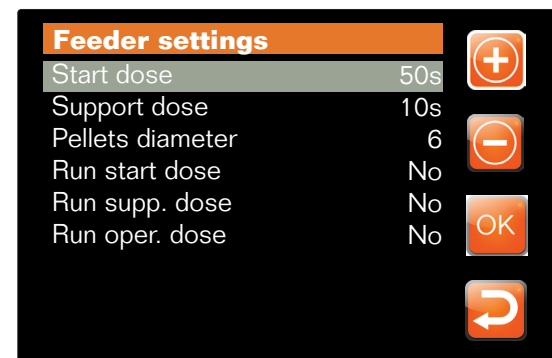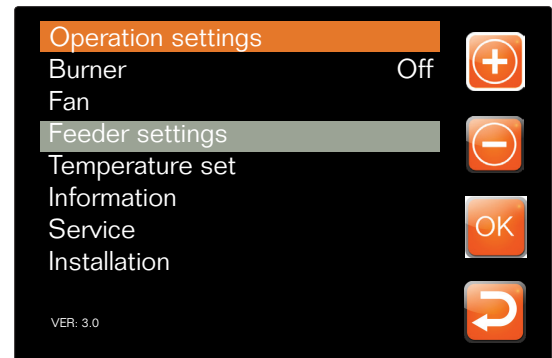## ■ Calibration of feed dose - Integrated fuel store version

Setting the start dose

When the auger is properly packed and full enter the OPERATION menu and open the FEEDER SETTINGS menu and then press RUN START DOSE.

Collect the pellets being fed during the test start dose process. It should be exactly 40cl. If it is less increase the amount of seconds of the start dose and run another test It the start dose is greater than 40cl decrease the amount of seconds for the start dose and then run the test start dose again.

Keep testing until the start dose being fed is exactly 40cl.

When this step has been processed the boiler is to be reassembled again by putting the fall shaft hose back in to the burner.

Operation settings	
Burner	Off
Fan	
Feeder settings	
Temperature set	
Information	
Service	
Installation	
VER: 3.0	

Feeder settings	
Start dose	50s
Support dose	10s
Pellets diameter	6
Run start dose	No
Run supp. dose	No
Run oper. dose	No

The plastic hose is the fall shaft for pellets in to the burner and should be removed in order to collect and measure the amount of pellets being fed.
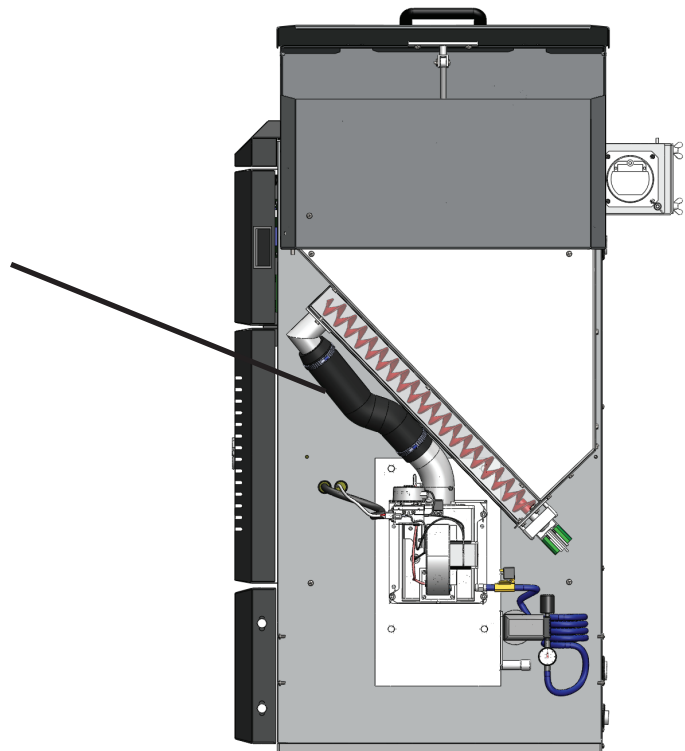
! *If the feeder isn´t running it is likely that under pressure over the boiler isn´t sufficient. Make sure that the burner fall shaft is plugged at all time when the black plastic fall hose is out of the burner.*

■ Calibration of feed dose - Suction version

Controller setup
Press anywhere on the display and then press the OPE-RATION icon.

Operation settings	
Burner	Off
Fan	
Feeder settings	
Temperature set	
Information	
Service	
Installation	

VER: 3.0

Operation settings menu:
Use the + and - buttons together with OK and the Return key to navigate the menu system.

- Confirm that burner is set to OFF.

Feeder menu:
Enter the FEEDER SETTINGS menu.

Change the pellets diameter to 6 or 8 mm. pellets.

Change the start dose value to 48s which will get you reasonably close to the correct start dose value.

Feeder settings	
Start dose	50s
Support dose	10s
Pellets diameter	6
Run start dose	No
Run supp. dose	No
Run oper. dose	No

! A correctly adjusted start dose is one of the most critical and important steps of a comissioning process. If the start dose is incorrect it will give the wrong output on the boiler which might create operational issues, excessive wear on parts and even be dangerous in extreme situations.

Calibration of feed dose - Suction version

Filling the internal storage

Press anywhere on the display and then press the OPE-RATION icon.

Operation settings menu:

Use the + and - buttons together with OK and the Return key to navigate the menu system.
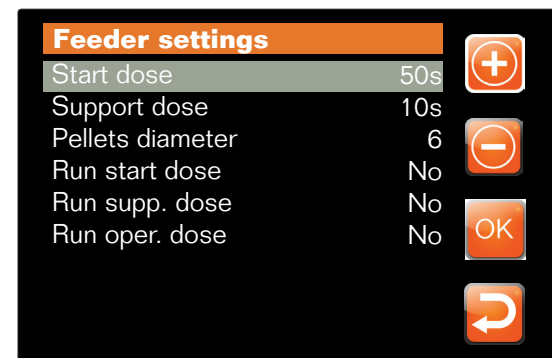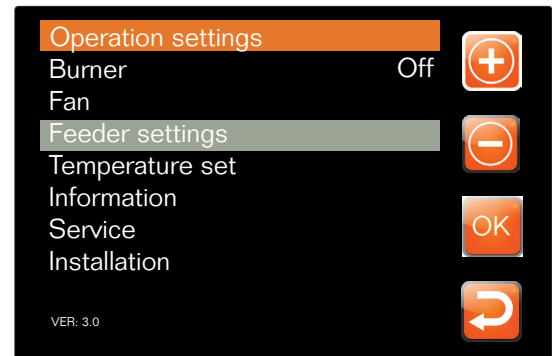
- Confirm that burner is set to OFF.

Installation menu:
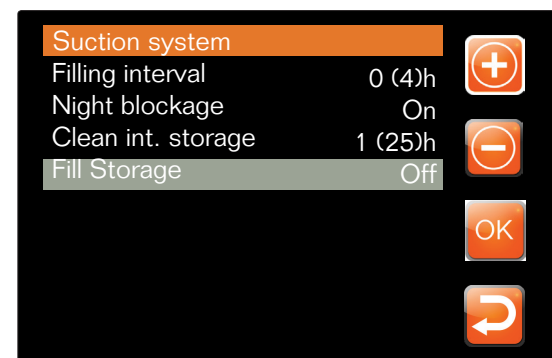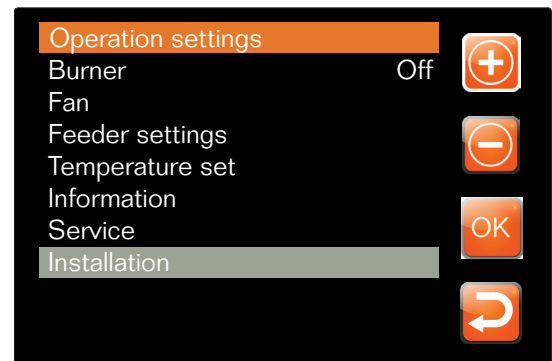
Enter the INSTALLATION menu.

Scroll down to SUCTION SYSTEM and press OK.

Suction system menu:

In the suction system menu scroll down to FILL STORAGE and set the function to ON.

The filling process will now begin.

NOTE: There is a delay time until the vacuum motor comes. It will take 2-3 minutes until the turbine comes on and with a empty storage it can take up to 15 minutes until it is fully filled.

Operation settings	
Burner	Off
Fan	
Feeder settings	
Temperature set	
Information	
Service	
Installation	

Installation	
Advanced	>
Fill feeder	NO
Effect High speed	15kW
Effect low sepped	0kW
Testblow start	0s
Phase out	10s
Fan Pre oper.	40%
Fan low pre oper.	50%
Clean Phase out	12s
Flame Sens	>
Quick Start	>
Lam,bda probe	>
Suction System	>
Cascade	>

Suction system	
Filling interval	0 (4)h
Night blockage	On
Clean int. storage	1 (25)h
Fill Storage	Off

! *If the feeder isn´t running it is likely that under pressure over the boiler isn´t sufficient. Make sure that the burner fall shaft is plugged at all time when the black plastic fall hose is out of the burner.*

Calibration of feed dose on a boiler equipped with a suction unit:
When the on board pellets storage has been filled it is time to calibrate the feed rate.

Remove the front casing of the fuel store. The internal fuel store and burner unit will be visual. Remove the fall shaft connection by removing the elbow coming out from the storage. For reference see illustration on page 15.

Place a container underneath the hole to the feeding opening where the elbow used to connect to the storage to collect the pellets that will be fed during a auger filling procedure.

The hole down the fall shaft to the burner (where the black plastic hose where connected originally) needs to plugged temporarily in order to be able to build under pressure in the fire box and allow the auger to feed in test mode.

Enter the OPERATION menu and then INSTALLATION menu. Activate the FILL FEEDER function which will force feed pellets for 15 minutes. Meanwhile the auger is filling up tap the auger repeatedly to ensure that it is packed with fuel. When pellets comes out at the end of the auger the fill feeder should be set back to NO and then directly back to ON to have a full 15 minutes feed of pellets to make sure enough pellets is in the auger. Collect the pellets in a bag or container during this 15 minute feed. Do not stop the feeding process, it is critical to have a properly packed and filled auger in order to calibrate the feed rate in the next step.

! A correctly adjusted start dose is one of the most critical and important steps of a comissioning process. If the start dose is incorrect it will give the wrong output on the boiler which might create operational issues, excessive wear on parts and even be dangerous in extreme situations.

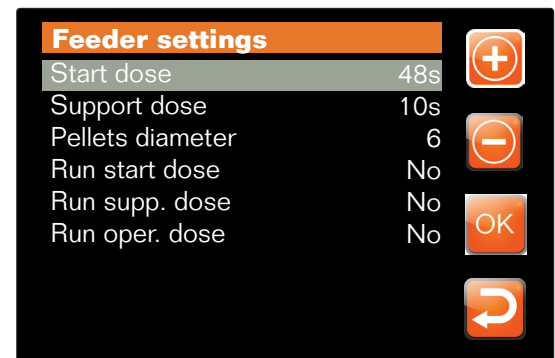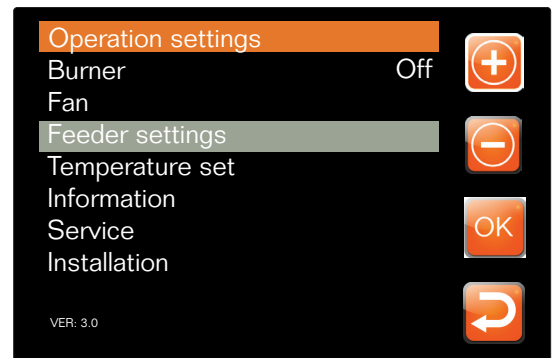## Calibration of feed dose - Suction version

Setting the start dose

When the auger is properly packed and filled enter the OPERATION menu and open the FEEDER SETTINGS menu and then press RUN START DOSE.

Collect the pellets being fed during the test start dose process. It should be exactly 40cl. If it is less increase the amount of seconds of the start dose and run another test It the start dose is greater than 40cl decrease the amount of seconds for the start dose and then run the test start dose again.

Keep testing until the start dose being fed is exactly 40cl.

When this step has been processed the boiler is to be reassembled again by putting the fall shaft hose back in to the burner.

NOTE: A good value to begin with is 48s for the start dose. It will take the initial tests close to 40cl. of feed rate.

Operation settings	
Burner	Off
Fan	
Feeder settings	
Temperature set	
Information	
Service	
Installation	

VER: 3.0

Feeder settings	
Start dose	48s
Support dose	10s
Pellets diameter	6
Run start dose	No
Run supp. dose	No
Run oper. dose	No

The elbow connecting the fall shaft with the on board storage. Remove it by unwinding the two M8 nuts.
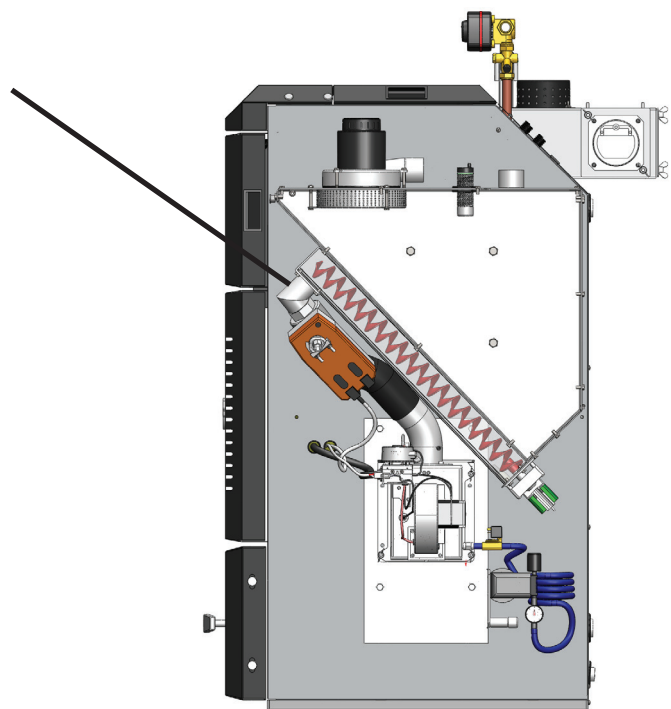
! *If the feeder isn´t running it is likely that under pressure over the boiler isn´t sufficient. Make sure that the burner fall shaft is plugged at all time when the black plastic fall hose is out of the burner.*
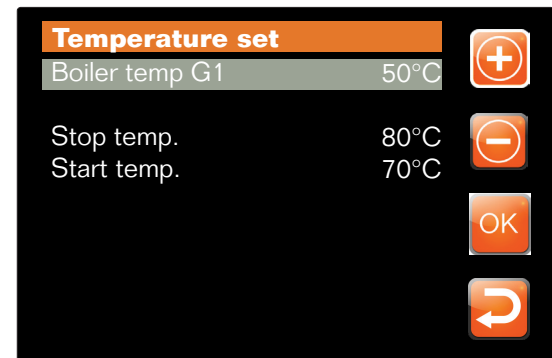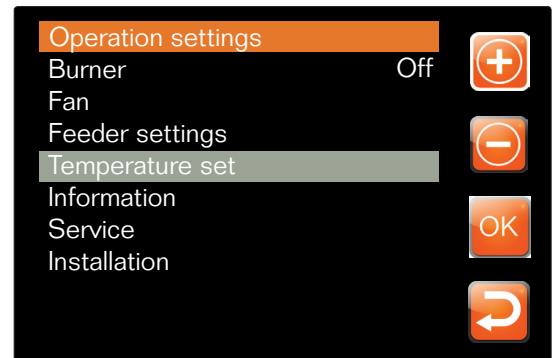
■ Program setup - temperature set

Temperature set

Press OPERATION and then open TEMPERATURE SET menu.

In the temperature set menu you will set the desired stop and start temperature of the burners on/off to heat the water volume within the boiler. Our recommendation is to have on at 65°C and off at 75°C.

These temperatures is not at all the same or in communication with the heating circuits used to heat the house. It is only the internal temperature within the boiler body.
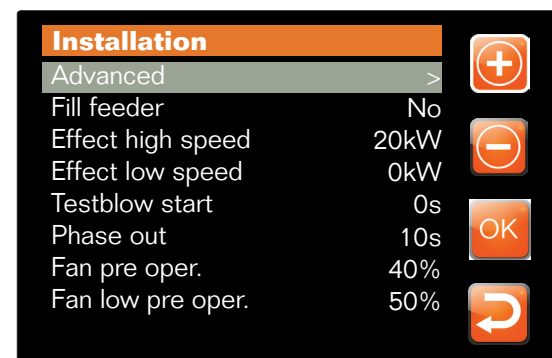
Operation settings	
Burner	Off
Fan	
Feeder settings	
Temperature set	
Information	
Service	
Installation	

Temperature set	
Boiler temp G1	50°C
Stop temp.	80°C
Start temp.	70°C

■ Program setup - effect output

Effect output

Press OPERATION and then open the INSTALLATION menu.

Scroll down to Effect high speed and set the boilers high speed output at the desired effect. Never use a higher output than the rating of the product!

If the boiler also will be used with a low power output the Effect low speed needs to be set. We recommend it to be 50% of the boilers maximum rated output.

Operation settings	
Burner	Off
Fan	
Feeder settings	
Temperature set	
Information	
Service	
Installation	

Installation	
Advanced	>
Fill feeder	No
Effect high speed	20kW
Effect low speed	0kW
Testblow start	0s
Phase out	10s
Fan pre oper.	40%
Fan low pre oper.	50%
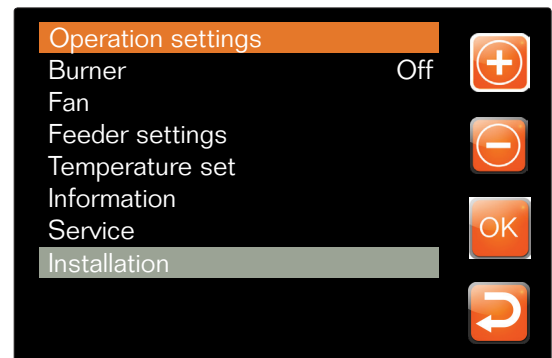
! Never use a higher output than the maximum rated output of the product!

■ Program setup - date & time
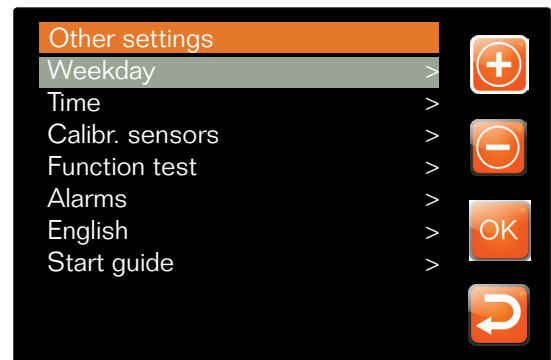
Date & time
Press OTHER and then open the WEEKDAY menu.

Set the correct date and then press return to get back to the Other setting menu.

Press TIME to open the menu for the clock. Set the correct local time.

Other settings	
Weekday	>
Time	>
Calibr. sensors	>
Function test	>
Alarms	>
English	>
Start guide	>

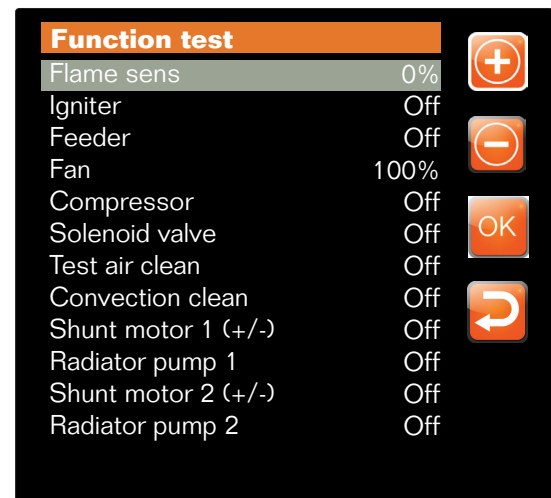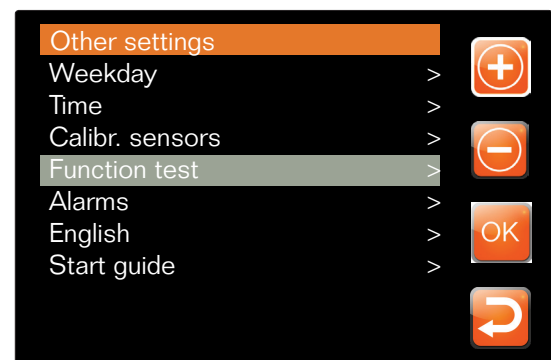## ■ Program setup - function test

Function test of shunt motors
Press OTHER and then open the FUNCTION TEST menu.

Depending on what functions the boiler have been delivered with a different view will appear in the function test menu.

Test the following functions:

Shunt motor 1 (also 2 and 3 if applicable) needs to controlled so that they open in the right direction. Press +/- and check that they very slowly open in the right direction. Note that it can be either clockwise or counterclockwise depending on how the shunt valve has been set up. If the motor is operating in the wrong direction the power freed phases needs to be switched.

Other settings	
Weekday	>
Time	>
Calibr. sensors	>
Function test	>
Alarms	>
English	>
Start guide	>

Function test	
Flame sens	0%
Igniter	Off
Feeder	Off
Fan	100%
Compressor	Off
Solenoid valve	Off
Test air clean	Off
Convection clean	Off
Shunt motor 1 (+/-)	Off
Radiator pump 1	Off
Shunt motor 2 (+/-)	Off
Radiator pump 2	Off

■ Back end protection

Back end protection

If one or more heating circuits is connected to the connections at the back of the boiler the back end protection function must be enabled at all times.

NOTE: Warranty is void unless the back end protection function is enabled.

OPERATION   HEATING SYSTEM   OTHER

■ Program setup - back end protection

Back end protection

Press anywhere on the controller and then open the HEATING SYSTEM menu.

Depending on what sensors has been connected to the boiler and what program options the system has been set up with the HEATING SYSTEM menu will appear differently. The one illustrated is displayed if one sensor G7 is attached and the programmer is set to a constant flow temperature.

In the shunt control menu scroll down to BACKEND PROT and press OK. In the BACKEND PROT menu make sure that the function is set to YES.
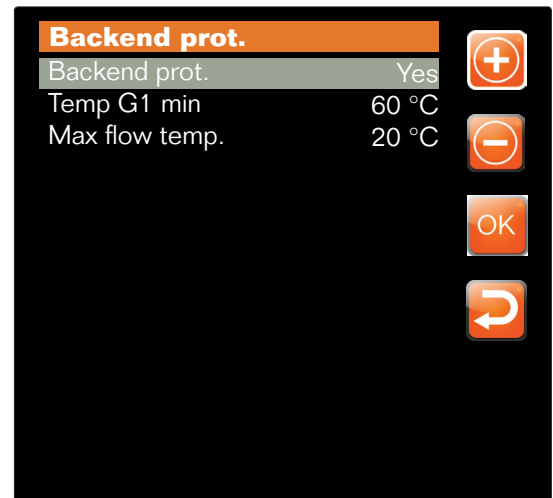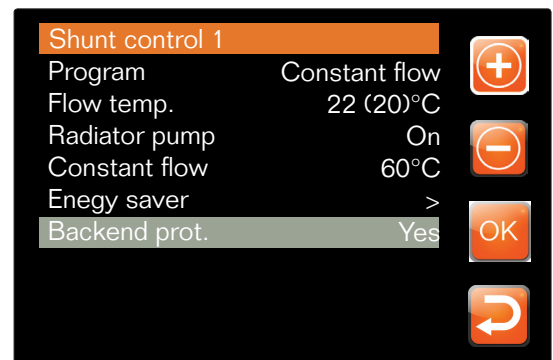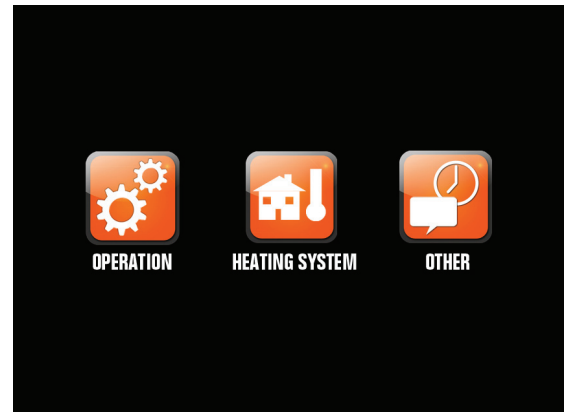
Recommended settings:
Temp G1 min: 60°C
Max flow temp: 20°C

Description of function:

The first parameter (Temp G1 min) is the temperature within the boiler where the Backend protection function will be enabled. In the above example the function will be activated when the temperature drops below 60°C. The function will then restrict the flow temperature down to the Max Flow temp which in the above example is set to 20°C. Since the draw of hot water is limited to a minimum while the backen protection function is active the boiler temperature (G1) will then rise and when the boiler temperatures reaches 61°C the shunt motor will slowly start to open again.

Shunt control 1	
Program	Constant flow
Flow temp.	22 (20)°C
Radiator pump	On
Constant flow	60°C
Enegy saver	>
Backend prot.	Yes

Backend prot.	
Backend prot.	Yes
Temp G1 min	60 °C
Max flow temp.	20 °C

! Boiler warranty is void if the backend protection function isn´t activated when heating circuits are connected to the back connections of the boiler.

◼ Heating circuits

Setting up the heating circuits

All Komplett lll can control up to three individual heating circuits with a great variety of programs as well as day/time set back. To set up the heating circuits it is important to have the project documentation available in order to set the system up as it has been sold originally.

The layout and controls can be done in more than fifty ways and we will in this document try to explain the basic functions. Please use the users manual as reference if deeper information is needed.

For the circuits to work you need the following components installed:

Components for heating circuits	Amount used per heating circuit
Shunt valve 3 way	1 pcs. per heating circuit
Shunt motor 120s ESBE	1 pcs. per heating circuit
Flow sensor, article 301701	1 pcs. per heating circuit
Outdoor sensor, article 301702	1 pcs. common for all available heating circuits.
Room sensor, article 30171	1 pcs. per heating circuit

◼ Activating the heating system menu

Heating system menus

The flow sensors enables and activates the menus for each heating circuit. The first flow sensor needs to be connected to G7 on the main board in order to activate heating circuit one. The second and third heating circuit is controlled from the expansion board and are at port G9 and G10.

NOTE: If the flow sensor for the desired heating circuit isn't connected the menu for the circuit will not appear in the controller!

A electrical diagram is available in the full manual for the Komplett lll boilers.

| Shunt control 1	
Program	Constant flow
Flow temp.	22 (20)°C
Radiator pump	On
Constant flow	60°C
Enegy saver	>
Backend prot.	Yes

◼ Heating program options

Room

If the program ROOM is choosen the shunt motor will regulate the shunt valve to maintain a certain room temperature getting it's reference from the room sensor. One room sensor is used for each heating circuit using this program. The active sensors in this set up is the flow sensor and room sensor.

It is possible to use the ENERGY SAVER function to set back the room temperature with the desired amount of degrees on two different times each individual weekday.

Recommended to use when: The building uses radiators and the room sensor is placed in a location where it isn't affected by direct sunlight or chill from doors opening and closing. It should be placed in a central location of the building and not on a outer wall.

Not recommended to use when: The building uses radiant floor heating / under floor heating.
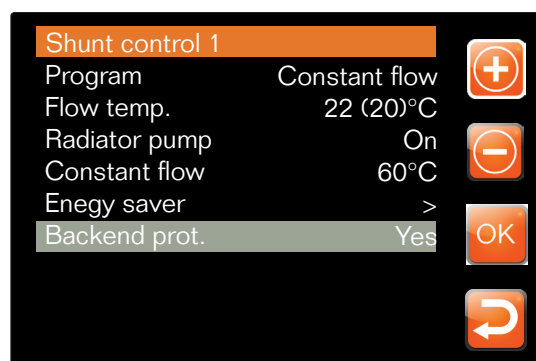
■ Heating program options

Outdoor

If the program OUTDOOR is choosen the shunt motor will regulate the shunt valve to maintain a certain room temperature getting it's reference from the outdoor sensor. The temperature to the flow is determined with the help of a heating curve and adjustment in the program. This is also known as weather compensation. The same outdoor sensor can be used for all three heating circuits running on the same program option. The active sensors in this set up is the flow sensor and the outdoor sensor.

It is possible to use the ENERGY SAVER function to set back the flow temperature with the desired amount of degrees on two different times each individual weekday.

Recommended to use when: The building uses radiators or underfloor heating.

NOTE: The outdoor sensor must be placed on a north facing wall to function properly!

Both

If the program BOTH is choosen the shunt motor will regulate the shunt valve to maintain a certain room temperature getting it's reference from the outdoor sensor. The temperature to the flow is determined with the help of a heating curve and adjustment in the program. This is also known as weather compensation. The same outdoor sensor can be used for all three heating circuits running on the same program option.

The difference between to the program BOTH and the program OUTDOOR is that the room sensor will correct the temperature to the flow with 5°C for every °C the room temperature is off. Example: If a desired room temp is set at 20°C and the actual room temperature is 19°Cthe temperature to the flow will raise with 5°C until the difference between desired room temperature and the actual room temperature is 0°C.

The active sensors in this set up is the flow sensor, room sensor and the outdoor sensor.

It is possible to use the ENERGY SAVER function to set back the flow temperature with the desired amount of °C on two different times each individual weekday.

Recommended to use when: The building uses radiators or underfloor heating.

NOTE: The outdoor sensor must be placed on a north facing wall to function properly, the room sensor needs to be placed at a central location of the house where direct sunlight or chill from doors doesn't interfere with the room temperature.

Constant

If the program CONSTANT is choosen the shunt motor will regulate the shunt valve to maintain a constant temperature to the flow getting it's reference from the flow sensor.

The active sensors in this set up is the flow sensor.

It is possible to use the ENERGY SAVER function to set back the flow temperature with the desired amount of °C on two different times each individual weekday.

Recommended to use when: Any case where a separate heating controller is used.

■ Heating program options

Cylinder

If the program CYLINDER is choosen the shunt motor will regulate the shunt valve to maintain a constant temperature to the flow getting it´s reference from the flow sensor. This is a very simple way to control the temperature going to a remote cylinder where there is no possibility to connect a sensor measuring the actual cylinder temperaure.

The active sensors in this set up is the flow sensor.

It is possible to use the ENERGY SAVER function to set back the flow temperature with the desired amount of °C on two different times each individual weekday.

Recommended to use when: The cylinder is very remote without possibility to connect a sensor.

Cylinder 2

If the program CYLINDER 2 is choosen the shunt motor will regulate the shunt valve to maintain a set temperature in the cylinder. The cylinder sensor is connected on port G17 on the expansion board.

The active sensors in this set up is the flow sensor and a sensor in the cylinder.

It is possible to use the ENERGY SAVER function to set back the flow temperature with the desired amount of °C on two different times each individual weekday.

Recommended to use when: Always when a cylinder is used where a sensor can be wired back to the boiler.

Hydraulic schematics

For hydraulic references please see the full manual for the Komplett III.

◼ Customer details and information

User name:	
User adress:	
Installing company:	
Effectas order no:	
Serial no:	
Commissioning engineer:	

◼ Customer details and information

Boiler start temp G1		°C
Boiler stop temp G1		°C
Boiler start temp. G6 (only when G5 & G6 is active)		°C
Boiler stop temp. G5 (only when G5 & G6 is active)		°C
Max G6 (only when G5 & G6 is active)		°C
Max G1 (only when G5 & G6 is active)		°C
Start dose value		S
Start dose measured value		cl.
Fan burner		%
Flue boiler		%
Fan burner low		On/Off
Fan burner low (if low effect On)		%
Flue boiler (if low effect On)		%
Effect high speed		kW
Effect low speed (if activated)		kW
Back end protection		Yes/No

SEND A COPY TO EFFECTA: gunilla@effecta.se

Effecta AB - Västra Rågdalsvägen 21 - 434 99 Kungsbacka - 0300 - 22320 - info@effecta.se